

REMARKS

The above-identified Application has been carefully reviewed with the Office Action of November 25, 2008, the Examiner's comments, and the art references cited therein in mind. In response thereto, Applicants submit the following arguments in support of patentability. Favorable reconsideration is hereby respectfully requested.

As a preliminary matter, Applicants wish to thank the Examiner for the thorough examination of the present application as evidenced in the non-final Office Action mailed November 25, 2008. The present Amendment and Response is responsive to the non-final Office Action mailed November 25, 2008.

The abstract has been objected to with regard to proper language and format; and the disclosure is objected to because of the informalities cited by the Examiner; and, appropriate correction is required. This has been done by the present Amendment and they are believed to be in proper form. The specification has been reviewed and amended to conform with proper idiomatic English. The amended version and a clean copy are submitted herewith for the convenience of the Office. No new matter has been entered via these amendments.

Claims 1-9 are pending in the application. Claims 6 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Claims 5 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Dufour et al (US 2003/0123472 A1). Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour et al. (US 2003/0123472 A1) in view of Roberts et al. (US 2003/0198189 A1). Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour et al. (US 2003/0123472 A1) in view of Owens et al. (US 2003/0039244 A1). Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour et al. (US 2003/0123472 A1) in view of Owens et al. (US 2003/0039244 A1) as applied to claim 6, and further in view of Bare (US 2003/0179707 A1). Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour et al. (US 2003/0123472 A1) in view of Buckingham et al. (US 6,657,970 B1).

By this amendment, the abstract, disclosure and claims 5 and 9 are amended. No new matter is added.

Favorable reconsideration of this application and claims, in light of the preceding amendments and following remarks, is respectfully requested.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure. Appropriate correction in the disclosure is required. The abstract and the disclosure are amended. Applicants respectfully believe the amended abstract and the disclosure conform to the related regulations. The detailed amendments are as follows:

By the present amendment to the Abstract, the words “and there is no” in the second line from the bottom of the abstract have been amended to “without”, therefore the abstract does not exceed 150 words in length. Applicants respectfully submit that the amended abstract has the proper language and format.

As shown by the present amendment, the words “Fig. 4” in line 13 on page 5 of description have been changed to “Table 4”. Accordingly, Applicants respectfully request this objection be withdrawn.

No new matter is added.

Claim Rejection – 35 USC § 112

Claims 6 and 9 are in conformity with the provisions of 35 U.S.C. 112, first paragraph

Claims 6 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Claim 9 has been amended. Applicants respectfully submit that the original claim 6 and the amended claim 9 comply with the enablement requirement, and accordingly request that the claim rejections under 35 U.S.C. 112, first paragraph be withdrawn. The detailed amendments and statement are as follows:

Regarding the issue indicated in the Office Action that the limitation “rebuilding data” in claim 6 is “not properly described in the application as filed in order to identify to one of ordinary skill in the art the scope of the claimed subject matter”. Applicants respectfully disagree and believe the original claim 6 complies with the enablement requirement. Since voice information and data information are distributed into several time slots separately when transmitted, it needs to rebuild the received data at the receiver end, that is, to compound the voice information received from different time slots together, and to compound the data information received from different time slots together, such that the complete information is acquired. Applicants respectfully believe how to rebuild the received data is common sense to the person skilled in the art. Therefore in the specification of the present application, it does not give unnecessary details on the manner and process of “rebuilding data”. One of ordinary skill in the art is able to make and use the same and shall set forth the best mode contemplated by

the inventor of carrying out his invention, from the technical scheme defined in claim 6. Thus the limitation "rebuilding data" in claim 6 is properly described in the application as filed in order to identify to one of ordinary skill in the art the scope of the claimed subject matter. Applicants respectfully submit the original claim 6 does not contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Therefore, Applicants respectfully submit that claim 6 complies with the enablement requirement and is in conformity with the provisions of 35 U.S.C. 112, first paragraph.

Regarding the issue indicated in the Office Action that the limitation "according to voice call condition" in claim 9 is "not properly described in the application as filed in order to identify to one of ordinary skill in the art the scope of the claimed subject matter". The limitation "according to voice call condition" in lines 4-5 of claim 9 has changed to "as voice call begins", and Applicants respectfully submit the amended claim 9 complies with the enablement requirement. To the one of ordinary skill in the art, from the recitation of "informing the time slot distribution circuit by CPU of the time slot having been released by the voice service after voice call finishes" in lines 8-9 of claim 9, it can be learned that the limitation "according to voice call condition" in "informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service according to voice call condition" in claim 9 actually refers to "when voice call begins". Therefore the limitation "according to voice call condition" in lines 4-5 of claim 9 is changed to "as voice call begins" and no new matter is added. By the present amendment to claim 9, one of ordinary skill in the art is able to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention. Thus the amended claim 9 is properly described in the application as filed in order to identify to one of ordinary skill in the art the scope of the claimed subject matter. Applicants respectfully submit that the amended claim 9 does not contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Therefore, Applicants respectfully submit the amended claim 9 complies with the enablement requirement and is in conformity with the provisions of 35 U.S.C. 112, first paragraph.

Claims 5 and 9 are in conformity with the provisions of 35 U.S.C. 112, second paragraph

Claims 5 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5 and 9 have been amended. By the present amendment to claims 5

and 9, Applicants respectfully submit the amended claims 5 and 9 comply with the provisions of 35 U.S.C. 112, second paragraph. The detailed amendments and statement are as follows:

Regarding the issue indicated in the Office Action that the phrase “to realize correct demultiplexing and multiplexing” in claim 5 renders the claim indefinite. The wording “to realize correct demultiplexing and multiplexing” in claims 5 has been deleted. By the present amendment to claim 5, Applicants respectfully submit the amended claim 5 is definite and complies with the provisions of 35 U.S.C. 112, second paragraph.

Regarding the issue indicated in the Office Action that the limitation “according to voice call condition” and the word “thereby” in claim 9 render the claim indefinite, claim 9 has been amended. The limitation “according to voice call condition” in claim 9 has been amended to “as voice call begins” as mentioned above, and the wording “thereby to implement dynamic adjustment of Ethernet data service” in line 7 of claim 9 has been amended to “whereby dynamic adjustment of Ethernet data service is implemented”. By the present amendment to claim 9, Applicants respectfully submit that the amended claim 9 is definite and complies with the provisions of 35 U.S.C. 112, second paragraph.

Claim Rejection – 35 USC § 102

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Dufour et al. (US 2003/0123472 A1). Applicants respectfully disagree and believe the method defined in Claims 1-4 is not anticipated by Dufour et al under the provisions of 35 U.S.C. 102(e).

Claim 1 is in conformity with the provisions of 35 U.S.C. 102(e):

For a proper rejection of a claim under 35 U.S.C. §102, the cited reference must disclose, teach, or suggest all elements/features of the claim at issue. See, e.g., *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 7 U.S.P.Q.2d 1129 (Fed. Cir. 1988).

Claim 1 of the present invention defines a method for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising adding a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service.

With reference to Dufour et al, it discloses to a method and apparatus for in-service dynamic allocation of bandwidth in a TDM network, wherein a designated code generator is configured for generating and inserting into each unallocated time slot a designated code to identify that the time slot contains no payload data (please see paragraph [0015] on page 2 of Dufour et al).

It can be seen that the technical scheme defined by claim 1 of this application is different from Dufour et al, and at least the following elements defined in Claim 1 of the present invention are not found in Dufour et al:

a) The element of “adding a control channel in a trunk link of the transmission equipment” is not found in Dufour et al.

Dufour et al does not add a control channel in a trunk link of the transmission equipment singly, but inserts into each unallocated time slot a designated code. It can be seen that, in the technical scheme disclosed by Dufour et al, the time slot into which the designated code is inserted will be allocated to transmit data. That is to say, in Dufour et al, the designated code and the data are mixed together, and are transmitted in the same time slot. Moreover, in Dufour et al, the designated code is only inserted into each unallocated time slot, but it is not inserted into allocated time slots. It can be seen that the control channel defined in claim 1 of the present invention is quite different from the designated code in Reference 1. In Claim 1 of the present invention, it does not insert into each unallocated time slot a designated code. Since the control channel is for describing occupancy on time slots by a current service, the control channel in a trunk link of the transmission equipment is changeless, in other words, no matter whether there are unallocated time slots, the control channel may comprise an amount of time slot permanently, for example, as is recited in paragraph [0009] on page 1 of the description in the present invention, the control channel may comprise one or more time slots. And the time slot which the control channel defined in claim 1 of this application comprises is specialized for the control channel, but will not be used for other purpose, for example, the data to be transmitted will not be transmitted in the time slot which the control channel comprises. Therefore, Dufour et al does not disclose the technical feature defined by claim 1 of this application that “adding a control channel in a trunk link of the transmission equipment”.

b) The element of “adding a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service” is not found in Dufour et al.

In Dufour et al, the designated code is for “identifying that the time slot contains no payload data”, that is to say, the designated code only describes the time slot which contains no payload data, but does not describe the time slot which contains payload data. However, the technical scheme defined by claim 1 of this application is quite different. The control channel defined by claim 1 of this application is for describing occupancy on time slots by a current service, that is to say, the control channel has to describe occupancy on time slots by a current service, no matter whether the time slot contains payload data. Therefore, Dufour et al does not

disclose the technical feature defined by claim 1 of this application that “adding a control channel in a trunk link of the transmission equipment for describing occupancy on time slots by a current service”.

Therefore, the control channel in claim 1 of the present invention is different from that in Reference 1, since the control channel in claim 1 uses different means to realize different functions and achieve different technical effects.

Thus, the technical scheme defined by claim 1 of this application is different from that disclosed in Dufour et al. At least the elements mentioned above defined in claim 1 of the present invention are not found in Dufour et al, therefore claim 1 of this application is in conformity with the provisions of 35 U.S.C. 102(e).

Moreover, the technical scheme defined by claim 1 of this application not only possesses novelty, but also possesses inventiveness relative to Dufour et al.

Claims 2-4 are in conformity with the provisions of 35 U.S.C. 102(e):

Similarly, dependent claims 2-4, as the dependent claims of claim 1, are also in conformity with the provisions of 35 U.S.C. 102(e) and should be allowable.

Claim Rejection – 35 USC § 103

Claim 5 is in conformity with the provisions of 35 U.S.C. 103(a)

The rejection of claim 5 is both incomplete and improper in view of the established standards for rejections under 35 U.S.C. § 103.

In this regard, the MPEP section 2141 states:

The Supreme Court in KSR reaffirmed the familiar framework for determining obviousness as set forth in *Graham v. John Deere Co.* (383 U.S. 1, 148 USPQ 459 (1966))... As reiterated by the Supreme Court in KSR, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

- (A) Ascertaining the differences between the claimed invention and the prior art; and
- (B) Resolving the level of ordinary skill in the pertinent art.

In addition:

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

(C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention and

(D) Reasonable expectation of success is the standard with which obviousness is determined.

Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

As reflected above, the foregoing approach to obviousness determinations was recently confirmed by the United States Supreme Court decision in *KSR INTERNATIONAL CO. V. TELEFLEX INC. ET AL.* 550 U.S. 1, 82 USPQ2d 1385, 1395-97 (2007), where the Court stated:

In *Graham v. John Deere Co. of Kansas City*, 383 U. S. 1 (1966), the Court set out a framework for applying the statutory language of §103, language itself based on the logic of the earlier decision in *Hotchkiss v. Greenwood*, 11 How. 248 (1851), and its progeny. See 383 U. S., at 15–17. The analysis is objective:

“Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” *Id.*, at 17–18.

The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (MPEP 2141). Simply stated, the Office Action has failed to at least (1) ascertain the differences between and prior art and the claims in issue; and (2) resolve the level of ordinary skill in the art. Furthermore, the alleged rationale for combining the references is merely an improper conclusory statement that embodies clear and improper hindsight rationale.

Claim 5 is rejected under 35 U.S.C. 103(a) as being anticipated by Dufour et al et al. (US 2003/0123472 A1) in view of Roberts et al. (US 2003/0198189 A1). Claim 5 has been amended. Applicants respectfully submit the amended claim 5 conforms to the provisions of 35 U.S.C. 103(a).

The amended claim 5 of the present invention, as the dependent claim of claim 1, further defines the method is applied in peer networking.

Based on the above analysis on the comparison between claim 1 of this application and

Dufour et al, there are at least the following two distinguishing technical features between claim 5 of this application and Dufour et al:

a) The method for realizing dynamic adjustment of data bandwidth in transmission equipment defined in claim 5 of the present invention, comprises adding a control channel in a trunk link of the transmission equipment. Dufour et al does not disclose this technical feature. In Dufour et al, the designated code is inserted into each unallocated time slot, but it is not inserted into allocated time slots. And in Dufour et al, the data and the designated code are mixed together, and are transmitted in the same time slot.

b) In claim 5 of the present invention, the control channel is for describing occupancy on time slots by a current service. Dufour et al does not disclose this technical feature. In Dufour et al, the designated code is only to identify that the time slot contains no payload data.

With the above distinguishing technical features, the method defined in claim 5 effectively "realizes dynamic adjustment of data bandwidth in transmission equipment", without changing the structure of the original system. While in Dufour et al, there is a designated code generator configured for generating and inserting into each unallocated time slot a designated code, apparently, the structure of the original system in Dufour et al must be changed. Dufour et al does not provide any relative teachings for a person skilled in the prior art to acquire the technical scheme defined in claim 5 of this invention over Dufour et al with a combination of the different technical features mentioned above and further solves the technical problem of this invention.

It can be seen that Roberts does not disclose the above two distinguishing technical features as well. What Roberts discloses is having received a packet from the appropriate support, that the addressing information is correct and that the packet has been correctly demultiplexed (please see paragraph [0047] on page 4 of Roberts), which has been deleted in the amended claim 9 of the present invention. Roberts neither discloses the above distinguishing technical features, nor provides any relative teachings of applying the above distinguishing technical features to solve the technical problem to be solved in this application.

Thus it is non-obvious to one of ordinary skill in the art at the time of the instant application to include the teachings of Roberts to Dufour et al.

The above technical features are not the common technical means in the art.

Therefore to one of ordinary skill in the art, the subject matter in the amended claim 5 is non-obvious.

Furthermore, the technical scheme defined in claim 5 effectively realizes dynamic adjustment of data bandwidth in transmission equipment and obtains beneficial technical

effects, so it represents a notable progress.

Therefore, claim 5 has prominent substantial features and represents a notable progress with regards to the prior art, so it possesses the inventiveness.

Thus the amended claim 5, as the dependent claim of claim 1 of the present invention, is in conformity with the provisions of 35 U.S.C. 103(a) and should be allowable.

Claim 6 is in conformity with the provisions of 35 U.S.C. 103(a)

Claim 6 is rejected under 35 U.S.C. 103(a) as being anticipated by Dufour et al et al. (US 2003/0123472 A1) in view of Owens et al. (US 2003/0039244 A1). Applicants respectfully disagree and submit the device defined in claim 6 conforms to the provisions of 35 U.S.C. 103(a).

Claim 6 of the present invention defines a device for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising: a control word process circuit, a time slot distribution circuit and a CPU interface circuit, wherein the control word process circuit is designed to complete abstraction and insertion of control information in control channel of E1/T1 link; the time slot distribution circuit is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data; the CPU interface circuit implements controlling on time slot distribution. It can be seen that in claim 6 of the present invention, the abstraction and insertion of control information in control channel of E1/T1 link is completed by hardware---- a CPU interface circuit.

Regarding the apparatus for in-service dynamic allocation of bandwidth in a TDM network disclosed in Dufour et al, "data may be inserted to/removed from the allocated/de-allocated timeslots" (please see the last two lines of paragraph [0032] on page 3 of Dufour et al), and "a data unit inserter of the mapper/demapper commences (at any time) to inserts data units into the new set(s) of time slots being allocated to the tributary" (please see the last three lines of paragraph [0029] on page 3 of Dufour et al), wherein "the method claimed herein is implemented by software in the preferred embodiment, and the elements of the apparatus claimed herein are in the form of software" (please see paragraph [0036] on page 4 of Dufour et al). That is to say, in Dufour et al, the abstraction and insertion of control data is implemented by software, but not by a CPU interface circuit, which is hardware.

Furthermore, the apparatus for in-service dynamic allocation of bandwidth in a TDM network disclosed in Dufour et al does not comprise a time slot distribution circuit which is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data.

Therefore, it can be seen that the technical scheme of claim 6 of the present invention is different from that disclosed in Dufour et al. And there are at least the following two distinguishing technical features between claim 6 and Dufour et al:

a) The device for realizing dynamic adjustment of data bandwidth in transmission equipment defined in claim 6 of the present invention, comprises a control word process circuit which is designed to complete abstraction and insertion of control information in control channel of E1/T1 link. Dufour et al does not disclose this technical feature. In Dufour et al, the abstraction and insertion of control data is implemented by software, but not by a CPU interface circuit, which is hardware.

b) The device for realizing dynamic adjustment of data bandwidth in transmission equipment defined in claim 6 of the present invention, comprises a time slot distribution circuit which is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data. Dufour et al does not disclose separating voice time slots from Ethernet data time slots, and rebuilding data. And the data unit inserter in Dufour et al is "in the form of software", but not in the form of hardware---- a time slot distribution circuit.

Thus with the above distinguishing technical features, the device defined in claim 6 provides a device for realizing dynamic adjustment of data bandwidth in transmission equipment, to dynamically adjust Ethernet data bandwidth, effectively use repeater bandwidth resources and reduce the burden of CPU. While in Dufour et al, the elements of the apparatus claimed herein are in the form of software, which will increase the burden of CPU. Apparently, Dufour et al never possesses the motivation to effectively overcome the technical problem of dynamically adjusting Ethernet data bandwidth and effectively using repeater bandwidth resources, without increasing the burden of CPU. Additionally, Dufour et al does not provide any relative teachings for a person skilled in the prior art to acquire the technical scheme defined in claim 6 of this invention over Dufour et al with a combination of the different technical features mentioned above and further solve the technical problem of this invention.

Regarding the system and method for provisioning broadband service in a PPPoE network using a random username disclosed in Owens, Owens does not disclose the above two distinguishing technical features as well. Firstly, Owens does not disclose a control word process circuit which is designed to complete abstraction and insertion of control information in control channel of E1/T1 link. Secondly, Owens does not disclose a time slot distribution circuit which is designed to complete separating voice time slots from Ethernet data time slots, and rebuilding data. Although Owens discloses the DSLAM which is a device for DSL service that separates incoming phone and data signals for the purpose of directs them onto the

appropriate network (please see paragraph [0043] on page 3 of Owens), Owens can not separate voice time slots from Ethernet data time slots, since DSLAM is a frequency-division system, which uses different frequencies to separates incoming phone and data signals. While in claim 6 of the present invention, what being used is a time-division system, so it can separate voice time slots from Ethernet data time slots. Owens neither discloses the above distinguishing technical features, nor provides any relative teachings of applying the above distinguishing technical features to solve the technical problem to be solved in this application.

Thus it is non-obvious to one of ordinary skill in the art at the time of the instant application to incorporate the teachings of Owens into Dufour et al.

The above technical features are not the common technical means in the art.

Therefore to one of ordinary skill in the art, the subject matter in claim 6 is non-obvious.

Furthermore, the technical scheme defined in claim 6 dynamically adjusts Ethernet data bandwidth, effectively uses repeater bandwidth resources and obtains beneficial technical effects, so it represents a notable progress.

Therefore, claim 6 has prominent substantial features and represents a notable progress with regards to the prior art, so it possesses the inventiveness.

Therefore, claim 6 is in conformity with the provisions of 35 U.S.C. 103(a) and should be allowable.

Claims 7-8 are in conformity with the provisions of 35 U.S.C. 103(a)

Claims 7-8 are rejected under 35 U.S.C. 103(a). Applicants respectfully disagree and submit the device defined in claims 7-8 conform to the provisions of 35 U.S.C. 103(a).

As mentioned above, claim 6 conforms to the provisions of 35 U.S.C. 103(a), therefore Claims 7-8, as the dependent claims of claim 6, are also in conformity with the provisions of 35 U.S.C. 103(a) and should be allowable.

Claim 9 is in conformity with the provisions of 35 U.S.C. 103(a)

Claim 9 is rejected under 35 U.S.C. 103(a) as being anticipated by Dufour et al et al. (US 2003/0123472 A1) in view of Buckingham et al. (US 6,657,970 B1). Claim 9 is amended. Applicants respectfully submit the method defined in the amended claim 9 conforms to the provisions of 35 U.S.C. 103(a).

The amended claim 9 of the present invention defines a method for realizing dynamic adjustment of data bandwidth in transmission equipment, comprising:

informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is

multiplexed to a direction of E1/T1 link;

releasing the time slots from data service by the time slot distribution circuit, and distributing to the voice service;

informing the time slot distribution circuit by CPU of the time slot having been released by the voice service after voice call finishes; and

distributing the time slots to Ethernet data service by the time slot distribution circuit, to implement dynamic adjustment of Ethernet data service.

Regarding the method for in-service dynamic allocation of bandwidth in a TDM network disclosed in Dufour et al, wherein “a designated code generator is configured for generating and inserting into each unallocated time slot a designated code to identify that the time slot contains no payload data” (please see paragraph [0015] on page 2 of Dufour et al) and “the method claimed herein is implemented by software in the preferred embodiment, and the elements of the apparatus claimed herein are in the form of software” (please see the last three lines of paragraph [0036] on page 4 of Dufour et al). Obviously, Dufour et al does not differentiate between voice service and data service, and it does not differentiate the priority between voice service and data service as well.

As mentioned above, it can be seen that the technical scheme of the amended claim 9 of the present invention is different from that disclosed in Dufour et al. And there are at least the following four distinguishing technical features between the amended claim 9 and Dufour et al:

a) The method for realizing dynamic adjustment of data bandwidth in transmission equipment defined in the amended claim 9 of the present invention, comprises informing a time slot distribution circuit by CPU of time slots to be occupied by a voice service as voice call begins when a current service is multiplexed to a direction of E1/T1 link. Dufour et al does not disclose this technical feature. Firstly, as mentioned above, Dufour et al does not disclose “a time slot distribution circuit”, so a CPU in Dufour et al does not inform a time slot distribution circuit. And, a CPU in Dufour et al also does not inform of time slots to be occupied by a voice service when voice call begins, since Dufour et al does not differentiate between voice service and data service.

b) The method for realizing dynamic adjustment of data bandwidth in transmission equipment defined in the amended claim 9 of the present invention, comprises releasing the time slots from data service by the time slot distribution circuit, and distributing to the voice service. It can be seen that in the amended claim 9 of the present invention, the voice service takes priority of being distributed in the time slot when compared with the data service. That is

to say, the method defined in the amended claim 9 of the present invention realizes dynamic bandwidth adjustment for Ethernet data in the intelligent integration PCM device in communication domain while ensuring voice services. Dufour et al does not disclose this technical feature. In Dufour et al, it does not differentiate between voice service and data service, and it does not differentiate the priority between voice service and data service as well.

c) The method for realizing dynamic adjustment of data bandwidth in transmission equipment defined in the amended claim 9 of the present invention, comprises informing the time slot distribution circuit by CPU of the time slot having been released by the voice service after voice call finishes. Dufour et al does not disclose this technical feature.

d) The method for realizing dynamic adjustment of data bandwidth in transmission equipment defined in the amended claim 9 of the present invention, comprises distributing the time slots to Ethernet data service by the time slot distribution circuit after voice call finishes. Dufour et al does not disclose this technical feature. In Dufour et al, “the method claimed herein is implemented by software in the preferred embodiment” (please see the last three lines of paragraph [0036] on page 4 of Dufour et al).

Thus with the above distinguishing technical features, the method defined in the amended claim 9 provides a method for realizing dynamic adjustment of data bandwidth in transmission equipment, to dynamically adjust Ethernet data bandwidth and effectively use trunk bandwidth resources, especially, to realize dynamic bandwidth adjustment for Ethernet data in the intelligent integration PCM device in communication domain while ensuring voice services and reduce the burden of CPU (please see the second paragraph under Summary of the Invention). Apparently, Dufour et al never possesses the motivation to realize dynamic bandwidth adjustment for Ethernet data in the intelligent integration PCM device in communication domain while ensuring voice services and reduce the burden of CPU. Additionally, Dufour et al does not provide any relative teachings for a person skilled in the prior art to acquire the technical scheme defined in the amended claim 9 of this invention over Dufour et al with a combination of the different technical features mentioned above and further solves the technical problem of this invention.

It can be seen that Buckingham does not disclose the above four distinguishing technical features as well. Although Buckingham discloses “each voice port is dynamically coupled to one of the PCM bus time slots by programming the cross-connect device when it detects the off-hook signal from a voice port”, which is a common technical means in the art, Buckingham does not release the time slots from data service by the time slot distribution circuit, and distributing to the voice service. And Buckingham also does not distribute the time

slots released by the voice service to Ethernet data service by the time slot distribution circuit after voice call finishes. Buckingham neither discloses the above distinguishing technical features, nor provides any relative teachings of applying the above distinguishing technical features to solve the technical problem to be solved in this application.

Thus, it is non-obvious to one of ordinary skill in the art at the time of the instant application to include that of Buckingham in Dufour et al.

The above technical features are not the common technical means in the art.

Therefore to one of ordinary skill in the art, the subject matter in the amended claim 9 is non-obvious.

Furthermore, the technical scheme defined in the amended claim 9 dynamically adjusts Ethernet data bandwidth, effectively uses repeater bandwidth resources and obtains beneficial technical effects, so it represents a notable progress.

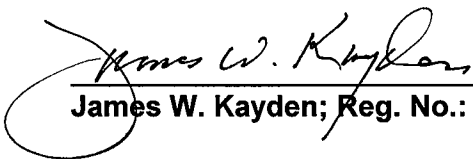
Therefore, the amended claim 9 has prominent substantial features and represents a notable progress with regards to the prior art, so it possesses the inventiveness.

Therefore, the amended claim 9 is in conformity with the provisions of 35 U.S.C. 103(a) and should be allowable.

CONCLUSION

With the amendments presented herein, it is believed that all the claims remaining in the Application are in condition for allowance. Early and favorable action in this regarding is hereby respectfully requested. Should there be any minor informalities remaining, the Examiner is respectfully requested to call the undersigned attorney so that this case may be passed to issue at an early date.

Respectfully submitted,


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